

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111
Serial Number: 10/045315
Filing Date: October 24, 2001
Title: MECHANICAL SUPPORT SYSTEM FOR A THIN PACKAGE
Assignee: Intel Corporation

Page 2
Dkt: 884.537US1 (INTEL)

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-6. (Canceled)

7. (Currently Amended) An electronic package comprising:
an interposer having an upper surface and a lower surface, the interposer being a tape having a thickness less than 1 mm;
a die secured to the upper surface of the interposer;
a pin carrier having a cavity, the pin carrier being secured to the lower surface of the interposer such that the cavity is adjacent, the interposer opposite to the die;
an electronic component secured to the lower surface of the interposer, the electronic component being positioned within the cavity in the pin carrier;
and
an encapsulant ~~at least partially~~ substantially filling the cavity while substantially not overflowing the cavity, the encapsulant supporting the interposer such that the interposer is capable of withstanding a mechanical load generated by thermal elements and is incapable of withstanding the mechanical load without the encapsulant.
8. (Original) The electronic package of claim 7, wherein the interposer is a composite metal and organic material.
9. (Original) The electronic package of claim 7, wherein the electronic component is a capacitor and the interposer is thin enough to minimize the inductive loop between the capacitor and the die.
10. (Original) The electronic package of claim 7, wherein the encapsulant is an epoxy.
11. (Original) The electronic package of claim 7, wherein the pin carrier is attached to the interposer using a ball grid array of solder balls.

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Page 3

Dkt: 884.537US1 (INTEL)

12. (Original) The electronic package of claim 7, wherein the cavity in the pin carrier includes a perimeter and the die includes a perimeter substantially aligned with the perimeter of the cavity.

13. (Original) The electronic package of claim 7, wherein the cavity in the pin carrier includes a perimeter and the die includes a perimeter that is smaller than the perimeter of the cavity.

14. (Canceled)

15. (Currently Amended) A data processing system comprising:

a bus;

a memory coupled to the bus;

a processor; and

an electronic package including an interposer that is a tape having a thickness less than 1 mm, a pin carrier and an electronic component, the processor being secured to one side of the interposer and the pin carrier being secured to other side of the interposer, the pin carrier electrically connecting the processor to the bus and including a cavity that is adjacent the interposer opposite to the processor, the electronic component being secured to the interposer within the cavity in the pin carrier, and the package further including an encapsulant that at least partially substantially fills the cavity in the pin carrier while substantially not overflowing the cavity, the encapsulant supporting the interposer such that the interposer is capable of withstanding a mechanical load generated by thermal elements and is incapable of withstanding the mechanical load without the encapsulant.

16. (Original) The data processing system of claim 15, wherein the electronic component is a capacitor.

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Page 4

Dkt: 884.537US1 (INTEL)

17. (Previously Presented) The data processing system of claim 16, wherein the interposer is thin enough to minimize the inductive loop between the capacitor and the die.

18. (Currently Amended) An electronic package comprising:
an interposer, the interposer being a tape having a thickness less than 1 mm;
a die secured to the interposer;
a pin carrier secured to the interposer, the pin carrier including a cavity opposite to the die;
an electronic component secured to the interposer within the cavity;
and
an encapsulant ~~at least partially~~ substantially filling the cavity while substantially not overflowing the cavity, the encapsulant supporting the interposer such that the interposer is capable of withstanding a mechanical load generated by thermal elements and is incapable of withstanding the mechanical load without the encapsulant.

19. (Previously Presented) The electronic package of claim 18, wherein the interposer the electronic component is a capacitor and the interposer is thin enough to minimize inductive loop between the capacitor and the die.

20. (Original) The electronic package of claim 18, where in the encapsulant is an epoxy.